

**REMARKS**

Applicants thank the Examiner for the careful consideration given this application.

Reconsideration of this application is now respectfully requested in view of the above amendments and the following remarks.

In view of the above amendments, Claims 1-20 are pending in this application, with Claims 1, 5, 14, and 18 being independent claims.

Rejections Under 35 U.S.C. § 101

At page 2, the Office Action rejects Claims 18-20 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. These rejections are respectfully traversed, but in an effort to expedite issuance, amendments to Claim 18 are submitted as shown above and as discussed below.

It is initially noted that patent laws regarding non-statutory subject matter have not changed since the "Examination Guidelines for Computer-Related Inventions" ("the previous Guidelines") were published by the U.S. Patent and Trademark Office ("PTO"), preceding the new interim guidelines. It is respectfully submitted that, under those guidelines, the present claims would be found to be statutory.

Current laws and legal precedent clearly allow claims in the form of a computer readable medium, also referred to as a *machine-accessible medium*, as recited in claims 18-20. See *In re Beauregard*, 35 USPQ2d 1383 (Fed.Cir. 1995). The previous Guidelines clearly show that this type of claim is a *statutory computer program embodied on a computer-readable medium*, where the computer-readable medium is a carrier wave (see, e.g., Example 13). Thus, the alternative

description of machine-accessible medium as described as a propagated or carrier wave signal in the Specification at paragraph [0015], is clearly statutory subject matter. Further, the burden is on the PTO to set forth a *prima facie* case of unpatentability. The Examiner bears the burden of establishing that a claimed invention is a natural phenomenon. Therefore, absent object evidence to support the position that the signal is a natural phenomenon, such a position would be untenable. M.P.E.P. § 2106 states that: "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."

The machine-accessible medium, as claimed, is a statutory article of manufacture. The carrier wave may be encoded with the "functional descriptive material." And as will be discussed below, a carrier wave is not intangible and merely a form of energy. Nor is whether a thing is "energy" the proper test. The proper test in this case is whether the thing is a "natural phenomenon." Until patent laws or legal precedent reverse this doctrine, machine-accessible medium claims in the form of diskettes, optical drives, non-volatile memory and carrier wave signals, etc., are all statutory subject matter.

Although a complete explanation has not been made, the Office Action *seems* to assert that a signal or carrier wave is *non-statutory* because it is "energy" and presumably not "in a tangible medium," as was held to be statutory subject matter by the court in *Beauregard*. As recited below, there is, however, legal precedent that shows that the view that there is nothing physical (i.e., tangible) about signals is incorrect.

These claimed steps of "converting", "applying", "determining", and "comparing" are physical process steps that transform one physical, electrical signal into another. The view that "there is nothing necessarily physical about 'signals' " is incorrect. *In re Taner* , 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (holding statutory claims to a method of seismic exploration including the mathematically described steps of "summing" and "simulating from"). The Freeman-Walter-Abele standard is met, for the steps of Simson's claimed method comprise an otherwise statutory process whose mathematical procedures are applied to physical process steps.

*Arrhythmia Research Technology Inc. v. Corazonix Corp.* 22 USPQ2d 1033, 1038 (Fed. Cir. 1992).

Appellants' claims are not in our view merely directed to the solution of a mathematical algorithm. Though the claims directly recite an algorithm, summing, we cannot agree that appellants seek to patent that algorithm in the abstract. Appellants' claims are drawn to a technique of seismic exploration which simulates the response of subsurface earth formations to cylindrical or plane waves. That that technique involves the summing of signals is not in our view fatal to its patentability. Appellants' claimed process involves the taking of substantially spherical seismic signals obtained in conventional seismic exploration and converting ("simulating from") those signals into another form, i.e., into a form representing the earth's response to cylindrical or plane waves. Thus the claims set forth a process and are statutory within §101.

Though the board conceded that appellants' process includes conversion of seismic signals into a different form, it took the position that "there is nothing necessarily physical about 'signals' " and that "the end product of [appellants' invention] is a mathematical result in the form of a pure number." That characterization is contrary to the views expressed by this court in *In re Sherwood*, 613 F.2d 809, 204 USPQ 537 (CCPA 1980), and *In re Johnson*, 589 F.2d 1070, 200 USPQ 199 (CCPA 1978), where **signals were viewed as physical** and the processes were viewed as transforming them to a different state." [emphasis added]

*In re Taner, Koehler, Anstey, and Castelberg*, 214 USPQ 678, 681 (CCPA 1982).

Thus, one can safely assume, until a court of higher authority holds otherwise, that a computer readable medium in the form of a signal claim is clearly statutory.

The above notwithstanding, Applicants have elected to amend Claim 18 to recite “A tangible machine-accessible medium ...” The use of the term “tangible” should successfully address the Office Action’s assertion that Claims 18-20 are directed to intangible media. However, as legal precedent shows (see above), carrier waves are tangible forms. Readers of a patent issuing from this application will be put on notice that the claims recite a machine-accessible medium, which may comprise any number of tangible media, such as solid-state memories, optical and magnetic disks, and a carrier wave that encodes a data signal, etc., as described in the specification. Should a higher court of law create legal precedent that defines carrier waves as intangible, then a reader of such patent will understand Claims 18-20 to exclude carrier waves from the recited “tangible machine accessible medium.” In either case, it is respectfully submitted that these claims are directed to statutory subject matter.

Rejections Under 35 U.S.C. §§ 102 and 103

At pages 2-8, the Office Action rejects Claims 1-7 and 9-20 under 35 U.S.C. § 102(b) as being anticipated by Marisetty et al. (U.S. Patent No. 5,768,598). At pages 9-10, the Office Action rejects Claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Marisetty et al. in view of Saunders et al. (U.S. Patent No. 6,654,896). These rejections are respectfully traversed in view of the amendments above and for at least the reasons discussed below.

Claims 1, 5, 14, and 18, as amended, recite that communications with a common platform using multiple protocols *simultaneously* may be supported. For example, Claim 1 now recites, “An apparatus, comprising: a communication device to support simultaneous communication with a common platform using at least two communication protocols, wherein said

communication device is adapted to be coupled to at least two communication interfaces." It is respectfully submitted that these amendments are supported, for example, by Figure 3 and the specification at paragraph [0018].

The Office Action, e.g., at page 3, relies on Marisetty et al. at col. 6, lines 35-40 and Figure 1, element 103, to teach supporting communication using at least two protocols. However, as noted, e.g., at col. 3, lines 1-3 and col. 5, lines 28-31 (as well as in the cited portion of col. 6), element 103 is a *single* programmable gate array (PGA). As explained in the cited sections of Marisetty et al., elements 103A-103D shown in Figure 1 *share* PGA 103 – that is, ***PGA 103 may only implement one of elements 103A-103D at a given time.*** Hence, these elements of Marisetty et al. cannot support simultaneous communication using more than a single protocol, as is now claimed in Claims 1-20.

Furthermore, nowhere else in Marisetty et al. has Applicant been able to find any teaching or suggestion that cures this deficiency. Similarly, with respect to Claim 8, Applicant has been unable to locate any teaching or suggestion that cures this deficiency of Marisetty et al.

For at least these reasons, it is respectfully submitted that Claims 1-20 are allowable over the cited references.

Applicants further note that they do not necessarily agree with the characterizations of either their claims or of the prior art, as discussed in the Office Action and not addressed above, but rather have chosen to address only selected issues. This is not to be understood as tacit concurrence with such characterizations or waiver of additional arguments.

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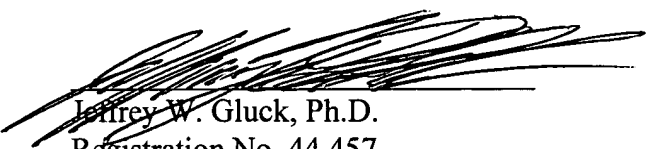
### *Conclusion*

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

Date: August 28, 2006



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